

## **ABSTRACT OF THE DISCLOSURE**

An extended exponent floating point unit performs an extended exponent floating point operation on a plurality of operands to produce a product of the plurality of operands. The extended exponent floating point unit groups the plurality of operands into at least one group, determines a plurality of scale factors for the plurality of operands, respectively, and provides a running sum of the plurality of scale factors. The extended exponent floating point unit further scales the plurality of operands to obtain a plurality of scaled operands, multiplies the plurality of scaled operands to obtain a group product, and scales the group product to obtain a scaled group product. The scaled group product is adjusted based on the running sum. The plurality of operands are grouped such that when all the plurality of scaled operands in the at least one group are multiplied an overflow or underflow will not occur.